Appendix 5.1 – Sample Collection And Preservation Chamber

Purpose: To collect water samples in a clean environment.
Consisting of: Two sections.

- Section 1: sample-wetted parts.
- Section 2: the chamber framework, field fabricated PVC or CPVC tube frame

Section 1: Sample wetted parts.
Consisting of: Teflon valve, Teflon Tee, Teflon rubbing (.500 and .625 OD sizes)

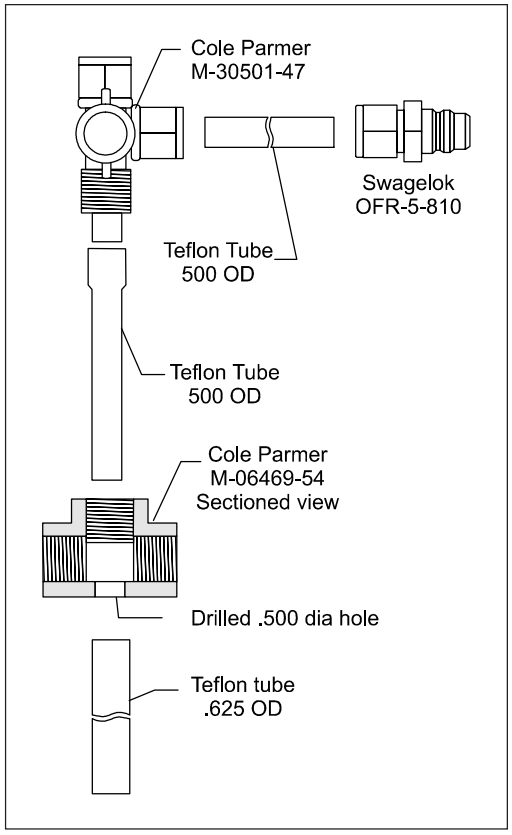
Item	Description	Unit	Quantity
1	Valve, Teflon, Three-Way Stopcock to fit .500 OD tube to fit .500 OD tube Cole-Parmer P/N M-30501-47	ea	1
2	Flaring tool required to assemble tube to valve: Cole-Parmer P/N M-07148-47 **NOTE:** One flaring tool is required to assemble the tube to the valve.	ea	1
3	Tee, Teflon, Cole-Parmer P/N M-06469-54	ea	1
4	Tubing, Teflon, smooth wall .500 OD x .062 wall (.375 ID) x 42" long Cole-Parner #06375-07	ea	1
5	Tubing, Teflon, smooth wall .625 OD x .062 wall (.500 ID)	ft	1
6	Quick-Connect Stem, SS, Full-Flow type (No shutoffs either end) with Swagelok fitting to fit .500 OD tube Swagelok P/N SS-QF8-S-810	ea	1
7	Nylon tie straps, .140 wide x 8 (nominal) long Thomas & Betts P/N TY-5242M Package of 10	pkg	1

Assembly Procedure
Section 1: Sample-wetted parts

Fabrication and Assembly Required:

1. Drill a .500-diameter hole through the back of the Teflon tee.
   Do this by running the drill bit straight down the branch of the Tee, then drilling through the opposite site (back) of the Tee.
   NOTE: Do not damage the threads in the branch of the tee.
2. Cut a 4-inch-long piece of .500 OD Teflon tube, and flare one end.
   Ensure that the free end of the tube has a clean, 90 degree cut end.
   Remove the nut from one of the run fittings of the valve, and slide the flared end of the tube onto the valve.

3. Insert the free end of the tube from step 2 into the branch of the Tee until the tube extends through the hole drilled in the rear of the Tee, and the threads on the valve engage the threads in the branch of the Tee. Thread the valve into the Tee until snug.
4. Cut a piece of .625 OD Teflon tube, 5 inches long.
5. Slide the .625 OD Teflon tube over .500 OD tube extending through the drilled hole in the Tee. Push the .625 tube until it gets tight or until it bottoms against the tee.
6. Flare one end of the remaining 36" piece of .500 OD Teflon tube.
7. Assemble the flared end of the .500 OD x 36: long Teflon tube to the branch fitting of the valve.
8. Assemble the Swagelok quick-connect stem to the free end of .500 OD x 36: tube



Section 2: Framework.
Consisting of: ½-inch schedule 40 CPVC pipe, elbows and tees:

All parts (except item 5) are readily available at most hardware stores, and are to be obtained locally.

Item	Description	Unit	Quantity
1	Pipe, CPVC, ½-inch schedule 40, 21 feet long (stock length-can be cut for transport)	ea	1
2	Elbow, CPVC, ½-inch schedule 40 'Slip' style for assembly with PVC primer and cement	ea	8
3	Tee, CPVC, ½-inch schedule 40 'Slip' style for assembly with PVC primer and cement	ea	4
4	Male adapter, CPCX, ½-inch schedule 40 'Slip' style one end, ½-NPT male threads other end.	ea	2
5	Teflon Tee, (from Assembly #8, section 1) "sample-wetted parts", with ½-NPT female threads.	ea	1
6	PVC/CPVC pipe primer		
7	PVC/CPVC pipe cement		

Note: If primer and cement are used, then the glued frame should be cured several days in a warm, well-ventilated area away from other sampling equipment. After curing, do a liquinox/tap water wash, tap-water rinse(3x) to remove detergent solution, DI-water rinse to remove tap-water residue, air

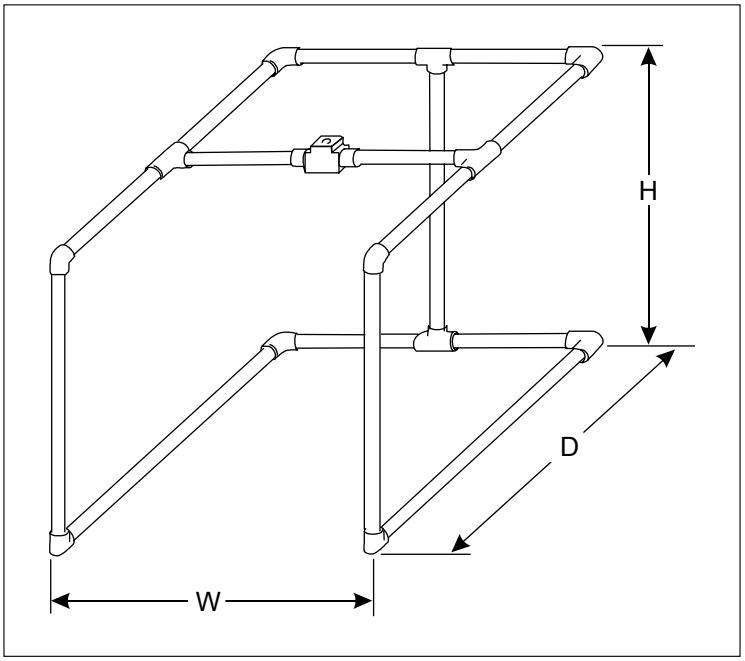
dry in a clean environment, and bag for storage before use. When storage bag is re-opened check to ensure no glue residue aroma can be detected.

Assembly Procedure
Section 2: Framework

Fabrication and Assembly Required:
Cut and glue* the CPVC pipe and fittings together to make the assembly shown in the sketch. Suggested overall dimensions are 16W x 16H x 16D. This will allow this frame to be 'nested' with the three frames of Assembly #12 for ease to transport.

Note that the male adapters should be assembled to the threaded Tee before the short cross-bar Pipes are glued to the adapters. There is considerable flexibility in the order in which the frame assembly can be glued together, but **be sure that you DO NOT leave installing the threaded Tee for last!**

*Some sampling units prefer to not glue the frame together. This allows them to 'knock-down' the frame for transport.



This appendix is taken directly from the U.S. Geological Survey's Hydrologic Instrumentation Facility (HIF) at the Stennis Space Center, MS. http://wwwhif.er.usgs.gov/

Next Section